IN THE CLAIMS:

1.-35. (Canceled)

36. (Original) A method, comprising:

providing a semiconducting substrate having a first layer of insulating material formed thereabove, said first layer of insulating material having at least one conductive metal structure positioned therein; and

performing an ion implant process to selectively implant ions only into said at least one conductive metal structure.

37. (Original) The method of claim 36, further comprising forming a second layer of insulating material above said first layer of insulating material and said at least one conductive metal structure.

38. (Original) The method of claim 36, wherein said first layer of insulating material is comprised of at least one of silicon dioxide and BPSG.

39. (Original) The method of claim 36, wherein said at least one conductive metal structure is comprised of copper.

40. (Original) The method of claim 36, wherein performing said ion implant process comprises performing said ion implant process using at least one of nitrogen, carbon, silicon and hydrogen.

41. (Original) The method of claim 36, wherein performing said ion implant process comprises performing said ion implant process at a dopant dose that ranges from approximately $1e^{13}$-$1e^{21}$ ions/cm^2.

42. (Original) The method of claim 36, wherein performing said ion implant process comprises performing said ion implant process at an energy level ranging from approximately 1-200 keV.

43. (Original) The method of claim 36, wherein performing an ion implant process to selectively implant ions only into at least said at least one conductive metal structure comprises performing an ion implant process to selectively implant ions only into at least said at least one conductive metal structure to thereby form a doped region in at least said conductive metal structure.

44. (Original) The method of claim 43, wherein said doped region has a thickness that ranges from approximately 5-50 nm.

45. (Original) The method of claim 43, wherein said doped region has a dopant concentration level that ranges from approximately $1e^{15}$-$1e^{21}$ ions/cm^3.

46. (Original) The method of claim 43, further comprising forming a second conductive metal structure above said doped region in said at least one conductive metal structure.

47.-74. (Canceled)

75. (New) The method of claim 36, wherein said step of implanting ions is performed by implanting ions through a reticle that is positioned above said conductive metal structure.

76. (New) The method of claim 75, wherein said reticle is not in contact with said conductive metal structure.

77. (New) A method, comprising:

providing a semiconducting substrate having a first layer of insulating material formed thereabove, said first layer of insulating material having at least one conductive copper structure positioned therein; and

performing an ion implant process to implant ions only into said at least one conductive copper structure, said implanted ions comprised of at least one of hydrogen, carbon, silicon and nitrogen.

78. (New) The method of claim 77, further comprising forming a second layer of insulating material above said first layer of insulating material and said at least one conductive copper structure.

79. (New) The method of claim 77, wherein said first layer of insulating material is comprised of at least one of silicon dioxide and BPSG.

80. (New) The method of claim 77, wherein performing said ion implant process comprises performing said ion implant process at a dopant dose that ranges from approximately $1e^{13}$-$1e^{21}$ ions/cm^2.

81. (New) The method of claim 77, wherein performing said ion implant process comprises performing said ion implant process at an energy level ranging from approximately 1-200 keV.

82. (New) The method of claim 77, wherein performing an ion implant process to implant ions into at least said at least one conductive copper structure comprises performing an ion implant process to implant ions into at least said at least one conductive copper structure to thereby form a doped region in at least said conductive metal structure, said doped region being comprised of at least one of said implant ions.

83. (New) The method of claim 82, wherein said doped region has a thickness that ranges from approximately 5-50 nm.

84. (New) The method of claim 82, wherein said doped region has a dopant concentration level that ranges from approximately $1e^{15}$-$1e^{21}$ ions/cm^3.

85. (New) The method of claim 82, further comprising forming a second conductive copper structure above said doped region in said at least one conductive copper structure.

86. (New) The method of claim 77, wherein said step of implanting ions is performed by implanting ions through a reticle positioned above said conductive copper structure.

87. (New) The method of claim 86, wherein said reticle is not in contact with said conductive copper structure.

88. (New) A method, comprising:

providing a semiconducting substrate having a first layer of insulating material formed thereabove, said first layer of insulating material having at least one conductive copper structure positioned therein; and

performing an ion implant process to implant ions only into said at least one conductive copper structure, said implanted ions comprised of at least one of hydrogen, carbon, silicon and nitrogen, wherein said step of implant ions is performed by implanting ions at a dopant dose that ranges from approximately $1e^{13}$-$1e^{21}$

ions/cm^2 through a reticle that is positioned above and not in contact with said conductive copper structure.

89. (New) The method of claim 88, further comprising forming a second layer of insulating material above said first layer of insulating material and said at least one conductive copper structure.

90. (New) The method of claim 88, wherein said first layer of insulating material is comprised of at least one of silicon dioxide and BPSG.

91. (New) The method of claim 88, wherein performing said ion implant process comprises performing said ion implant process at an energy level ranging from approximately 1-200 keV.

92. (New) The method of claim 88, wherein performing an ion implant process to implant ions into at least said at least one conductive copper structure comprises performing an ion implant process to implant ions into at least said at least one conductive copper structure to thereby form a doped region in at least said conductive metal structure, said doped region being comprised of at least one of said implant ions.

93. (New) The method of claim 92, wherein said doped region has a thickness that ranges from approximately 5-50 nm.

94. (New) The method of claim 92, wherein said doped region has a dopant concentration level that ranges from approximately $1e^{15}$-$1e^{21}$ ions/cm^3.

95. (New) The method of claim 92, further comprising forming a second conductive copper structure above said doped region in said at least one conductive copper structure.